

female as parish clerk, no male parishioner having so much learning or skill as to be able to write! This female probably still holds her post by virtue of her exclusive clerkship.

As to the more immediate subject of interest in the committee's report, that of public libraries, France contains 107 public libraries, all free, and unrestricted to poor and rich, to foreigner and native, while Britain has scarcely one of which the same can be said, although almost all foreign libraries together are free like those in France. Belgium has 14, Prussia 44, Austria 48, and the little State of Bavaria, 17. In Paris alone there are 7; in Florence 6; in Dresden 4, and in Vienna 3. A large proportion of these, too, are lending libraries, of which Britain is about as devoid as of libraries with perfectly free access. Indeed, the Chetham library, at Manchester, is the only one of the latter order in existence in this country, although a certain degree of freedom of access is enjoyed by the public, or certain classes of the public, in a few others. Even in such places as Birmingham, Sheffield, Leeds, and Hull, there is no public library of any kind. The United States appear to have numerous public libraries, and a multitude of readers, besides an immense general sale of books, so that authors do not appear to be injured by the public library system, but the contrary.

The first thing to be done towards the establishment of a liberal distribution of free public libraries in this country, advised in the evidence, is the erection of buildings by the respective town councils, or otherwise. Donations, it is believed, would thereupon rapidly flow in, and almost alone constitute large libraries. Half the books in the British Museum were donations. It is recommended, however, that Government assist by grants in aid of subscriptions, as to schools of design, &c., if not also by small rates, authorized by an extension of the 'Museums' Act, or otherwise. The reformation of such public libraries as already exist, is urged, and district branch libraries recommended. The Scottish system of itinerating libraries for small towns or villages is said to have worked well; and it appears that village libraries, farm libraries, mill, and even kitchen libraries, are spreading into minuter and more special ramifications, as it were, or rootlets of a great system. In the establishment of town libraries, it is conceived that, to be useful to the industrious classes, they must above all be open in the evenings. The want of such an arrangement in the British Museum library (which would of course require to be made compatible with freedom from all risk of loss by fire) renders it quite useless to such classes, and indeed to many literary professional men themselves. For the working classes, the system of public libraries actually, therefore, does not exist in this country at all. An evening sederunt is their only hope, and it is not in the least doubted that these classes would at once, and largely, avail themselves of such a privilege. The lending out of all ordinary works is regarded as an essential to the convenience and adequate study of the literary man himself. The utility of provincial town libraries to the provincial press, as well as to students and general authors, is inferred from various circumstances, such as occasional pilgrimages to the metropolis to consult works in the national library here. We have ourselves known instances of students quitting other employments in the provinces and coming to reside altogether in town, mainly with such views and purposes. In aid of the whole

system, as regards the people at large, the diffusion of lectures is strongly recommended, as eliciting discussion, and inducing many to seek out and peruse works bearing on the subjects of lecture. At present, some lecturers are said to reap a good harvest in the provinces, 500*l.* to 800*l.* per annum being estimated as the income of some of the more popular. The libraries of Mechanics' Institutes are said to belong to a somewhat higher class than the ordinary run of mechanics. A new order of public libraries, therefore, for the people at large is only the more pressing called for and necessary. In some of the 2,000 coffee houses in the metropolis there are rather extensive libraries accessible, it may be said, without cost, inasmuch as no charge is made, and coffee, &c., may be had from one penny upwards.

For special localities, special libraries, or collections of books, are advised, for the use of practical men. There should, it is thought, be a centralization of catalogues, if not a mutual and general exchange of them, and in the metropolis, in fact, a library of catalogues. Foreign nations, too, might exchange both catalogues and books, such as duplicates, as some already do. Authors and publishers abroad are called on as here to present copies of their books to certain libraries, but the Governments often subscribe to the publications, and purchase copies for further distribution. The benefit being public or national, it is justly conceived that the expense should not be borne by the authors. In fine, the appointment of a Ministry of Public Instruction is recommended.

We earnestly hope to see the intellectual wants of the population speedily supplied.

ON CIVIL ENGINEERING AND ARCHITECTURE.

AN INAUGURAL LECTURE.*

Civil engineering and architecture, the subjects upon which I am called to lecture, are both essentially practical sciences, and are in some measure so connected as to be synonymous; both the engineer and the architect must be well versed in the strength of the various materials with which they have to deal, and be so acquainted with their properties, as to be enabled to make a choice of them, for any peculiar circumstances attending their work.

Both must be mathematicians, draughtsmen, carpenters, masons, and be acquainted with the details of all, or nearly all, the mechanical trades; at least they must be learned judges of them, if not skilful operators.

They must both be men of business, and should not be ignorant of law. Both architecture and engineering, therefore, in their most comprehensive meanings, are studies of many and singularly opposite qualities, and are allowed by all whose opinions are worth regarding, to be sciences of the highest importance to the well-being of society; thus far the two professions go side by side. But architecture, as well as being a science, is also essentially a fine art, and here the two professions separate. The path of the architect will, after he has gained his practical knowledge of construction and building, be parallel with that of the painter and the poet in the regions of cultivated taste. The path of the civil engineer is widely different, and if his labours be less in the captivating regions of beauty than the architect's, they are perhaps more among the grand,—certainly more among the stern development of massive strength, to resist shocks, inundations, and storms which, from the simplicity of the requisite forms, and their associations, constitute grandeur. I come amongst you fully sensible of the responsibilities of my office, and with an equally full determination, to perform

its duties to the utmost of my power; and I shall expect you to go with me, cheerfully, to the tasks which lie before us, and assist me with your diligence. Nothing is more necessary to the due understanding and proper study of engineering and architecture, and to the formation of a proficient in either, than habits of application and industry. Without them even the lowest departments of the professions are not to be mastered. It is not a rapid growth that produces a sound and skilful practitioner, any more than precocity is an emblem of a great statesman. It is not by occasional fits of application, by short starts of preparation, by numerous little works, performed in a little time, and with less study, sometimes discontinued, and again renewed, that eminence is to be obtained in either of these arts; on the contrary, it is only by regular application—by a constant study of good examples—by able instruction,—by deep and intense study of the elementary principles, with an uninterrupted practice, solely directed to the object, grown up almost into a habit, and ready to be called into use at the shortest notice,—it is only by sacrificing every comfort that aims at prevention,—by having resolution to suffer nothing to impede your progress, and by avoiding the dead sea of idleness and pleasure, that you can be enabled to shine either as an architect or as an engineer. Michelangelo, full of the great and sublime ideas of his art, lived very much alone, and never suffered a day to pass without handling his chisel or his pencil. When some person reproached him for leading so melancholy and solitary a life, he said, "Art is a jealous thing, and requires the whole and entire man." He was also both frugal and temperate, and so persevering in his labour, that he used occasionally at night to throw himself upon his bed without disencumbering himself of the clothes he had worked in. Inigo Jones, by his indefatigable zeal, raised himself from the position of a working mechanic to that of the first architect of the day. He was bound apprentice to a joiner; but the Earl of Arundel, seeing his talent and industry, sent him to Rome to study landscape painting. When at Rome, finding that he possessed more talent for designing palaces than adorning cabinets, he turned his study to architecture. By denying himself the common necessities of life,—by rising early, and retiring late, sometimes not going to his bed at all, he conquered all the difficulties in his path; and after remaining some time in Italy, shackled by poverty, Christian the Fourth of Sweden invited him to Denmark, and appointed him his architect. He afterwards returned to England, and was made surveyor-general of the king's works to James the First, but refused to accept any salary until the heavy debts contracted under his predecessor had been liquidated. Upon the accession of Charles he was continued in his office, when his salary as surveyor was 8*l.* 4*d.* per day, with an allowance of 46*l.* per year for house rent. Sir Christopher Wren is an example of an architect excelling in mathematics, and producing works bearing the evident impress of their author's learning. From the number and diversity of his occupations, may be gathered the fact of his close study and application; and although unlike Inigo Jones he had not poverty to fight against, infinite credit is due to him. He was one of the original members of the club which was formed at Oxford in 1648, for philosophical discussion and experiments, and which eventually gave rise to the Royal Society. In 1657 he was chosen professor of astronomy at Gresham College, and on the restoration was appointed to the Savilian professorship of astronomy at Oxford. It was very soon after this that he was first called upon to exercise his genius in architecture (a study, however, which had previously engaged a good deal of his attention), by being appointed assistant to the surveyor-general. This led to Wren's employment on the work on which his popular fame principally rests—the rebuilding of the cathedral of St. Paul's after the great fire. The erection of this noble edifice occupied him for thirty-five years, but did not prevent him during the same period from designing and superintending the completion of many other buildings, nor even interrupted his pursuit of the most abstract branches of science. Wren was created a doctor of law

* Read by Mr. Glegg before the College of Civil Engineers, Putney, on Wednesday, Sept. 30th.